RESEARCH ARTICLE

Increasing of Early High-Risk Pregnancy Detection with Proactive Intervention in Bangkalan District, Madura Indonesia

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Abstract

Background: Maternal Mortality Rate (MMR) in Indonesia remains high despite various initiatives had been done to decrease. Factors that correlate with it are culture and referral. In this study, a proactive intervention was conducted to improve cultural and referral issues in a rural area. Aim: to explain the improvement of the early detection of high-risk pregnancy after a proactive intervention. Method: This study is an experimental design by implemented proactive intervention complemented antenatal care programs in the primary health care center. Midwifery students were enlisted to conduct a maternal assistance program to raise awareness of the importance of antenatal care visits, childbirth by health workers, and family planning programs. Results: The proactive intervention showed the increasing of early detection of high-risk pregnancy by skilled health personnel (p = <0.01). It means implementation of proactive intervention, by the year of 2015, there was no maternal mortality in Burneh district. Whereas in 2014, there were 3 maternal mortality from 1054 women who having birth. Conclusion: Implementation of a proactive intervention program was able to show an increase in early detection of a high-risk pregnancy by skilled health personnel.

Keywords: *Proactive intervention, High-risk pregnancy detection.*

Introduction

The high maternal mortality rate in Indonesia shows the low quality of health services, especially maternal health. Achievement to reduce maternal mortality rate in Indonesia is still slow, and what needs to be the government's main concern is the gap in the achievement of each region [1].

The maternal mortality rate (MMR) in Indonesia was 305 per 100,000 live births. This figure was well above the MMR global target in Sustainable Development Goals (SDGs) by 2030, which will decrease in maternal deaths to 70 per 100,000 live births.

Such a goal is not easily achieved. East Java is one of provinces in Indonesia which has stagnant number in MMR [2,3].

Factors contributing to maternal mortality in East Java were high-risk pregnancy detection by health care personnel and obstetric complication management [4]. A key area of concern is the ability of health services to optimally manage risk, particularly when maternal was identified. Despite recognition that it is the responsibility of all parties concerned, the referral system appears to not be working [5].

There are three factors that significantly impact maternal mortality in Indonesia: geographic, socio-cultural and economic. In Indonesian culture, a husband has a big influence in making decisions, including maternal health problems [6]. Hence, it can seriously reduce the woman's ability to access

fast and appropriate health care since they were pregnant. The lack of access to primary health care centers may subsequently have serious health implications following pregnancy and birth, thus increasing the risk of poor outcomes, even death, for the woman and the baby.

According to data from the Directorate of Maternal Health, Indonesia, an average of 10% of women in Indonesia never have an antenatal care visit. Furthermore, about 30% of women choose to give birth to traditional birth attendance or shaman rather than going to skilled health workers such as a doctor or a midwife [2,7, 8].

Bangkalan is a district on Madura Island, East Java. Burneh primary health care center (Puskesmas Burneh) is one of the examples of health facilities that provide services in remote areas of Bangkalan. The health worker needs to take several hours to reach a more high-level health facility [6,9]. Cultural factors were also challenging in providing effective health care. Delay in decision making approval from the patient and family for medical action and to refer the patient frequently encountered in day to day practice. Cultural and referral factors were one of the factors causing the high MMR [10].

The proactive intervention was chosen as a viable model to be developed in the future in an effort to reduce maternal mortality, with Bangkalan as a pilot project. This study examined whether the implementation of proactive intervention in Burneh district, Bangkalan, Indonesia, to overcome the problems.

Materials and Methods

This is an experimental study, comparing pregnancy outcomes of women who came to Burneh district primary health center in Bangkalan, Madura in 2014 (before the implementation of intervention program) with women who came in 2015 during which intervention program has been conducted. The sampling technique used in this study was total sampling through primary data.

Participating in the study were all pregnant women, a number 347 who live in the service area of Burneh district primary health care centre in Bangkalan, Madura.

Proactive Intervention. In principle, "proactive intervention" consists of: (1) Accompaniment of all pregnant women by 100 midwifery students using accompaniment checklist: to increase public, families and pregnant women awareness about the importance of antenatal care, to ensure all pregnant women have 4 times antenatal visits during their pregnancy, to ensure that all pregnant women had delivery assistance by the skilled health provider, and had family planning programs. (2) Improving the quality of maternal health services at Burneh Primary Health Center (Burneh PHC), especially in detection of high risk pregnancy using *Poedji Rochjati's* scoring card [4,11].

Using this card, every health care provider at Burneh primary health care center could be screening high-risk pregnant women. This card also used by maternal health cadres in villages to easily screen whether their neighbor, relatives or family have a risk in their pregnancy and brought them to Burneh's primary health care center. This research has been through the ethics of ethical clearance from Faculty of Medicine, Universitas Airlangga (No. 274/EC/KEPK/FKUA/2015).

Results

Accompaniment Programs by Midwifery Student

In 2014 (before proactive intervention implementation), the number of pregnant women in Burneh district at about 1106 and the number of women giving birth in skilled birth attendances were 981 pregnant women. Furthermore, in 2015 (after proactive intervention implementation), the number of pregnant women about 964 and the number of women having births in skilled birth attendances was 722 women.

Antenatal Visits at Primary Health Care Centre

In 2014, the frequencies of ANC in Burneh PHC, Bangkalan carrying amount of K1 and the number of K4 results showed that the dropout rate is still high (K1-K4). This was due to the mobilization of the population quite high.

Figure 1: Poedji Rochjati's scoring card (KSPR) for early detection of high-risk pregnancy

Table 1: First time visit ANC (K1) and fourth time ANC visit (K4)

Years	K1	K4	Number of pregnant woman	P
2014	1106	879	1145	<0.01
2015	881	601	964	

High Risk Detection from Health Provider

From Table 2, showed that high risk detection by health provider significantly increased at Burneh from 81,9 % to 97,9 % with P= 0,000.

Table 2: High risk detection from health provider

Years	High risk pregnancy	High risk detection by health provider	%	P
2014	221	181	81,9	<0,01
2015	145	142	97,9	

High Risk Cases had done by Health Provider

From table 3, showed that obstetric complication cases had done significantly decreased at Burneh from 52.5 % to 32,4 % with p value 0,000157. There was a decrease in severe birth complications due to early detection and referral of high-risk pregnancies better.

Table 3: High risk cases had done by health provider

Years	High risk pregnancy	High risk cases had done by health provider	%	P
2014	221	116	52,5	0,000
2015	145	47	32,4	

Delivery had done by Health Provider

Table 4 showed, the number of delivery had done by health provider in Burneh primary health care centre. From 920 pregnant women, there were 78,5% of them delivered by health provider in Burneh Primary health care centre centre Compared with its number in 2014, there were decreasing about 14,6%.

Table 4: Delivery had done by health provider

Years	Pregnant women	Delivery had done by health provider	%	P
2014	1054	981	93,1	0,000
2015	920	722	78,5	

Maternal Death

After the implementation of proactive intervention, by the year of 2015, there was no maternal mortality in Burneh district. Whereas in 2014, there were 3 maternal mortality from 1054 women who having birth.

Table 5: Maternal death

Years	Number Women Who Having Birth	Maternal Death
2014	1054	3
2015	920	0

Discussion

Based on finding data, a lot of cases were categorized as late referral due to geographical and cultural issues. Some of the areas in the Bangkalan consist of the hilly region that is difficult to reach by car or any other vehicle, including in Burneh district. Cultural issues were another hazard for the referral system[7]. The intervention was done by local students so that communication difficulties towards pregnant women will be reduced and cultural issues are lost.

Decision making for health services in the Madurese community is normally performed by the head of the household, especially for severe diseases that require comprehensive treatment, but for maternal health care services, especially service delivery, decision-makers is the husband of mothers who give birth [12,13].

The aim of pregnant women's accompaniment by midwifery students was to make sure that all pregnant women had 4 times antenatal care visits and received adequate quality antenatal care at Burneh PHC[14]. That accompaniment program by midwifery students was expected as an interactive process of any intervention with individuals, communities and/or societies to

developed communication strategies to promote positive behaviors which were the compliance of pregnant women having antenatal care visit, and was expected to overcome cultural and social hazard on successful antenatal care [15].

In 2014, the number of K1 (first visit of antenatal care in the first trimester) was 1145 (104%) and the number of K4 as many as 879 visits (79.5%). These numbers showed that the dropout rate was still high (K1-K4). The high number of dropouts caused by high mobility of pregnant women throughout the district and beyond, since Bangkalan is the nearest district to Surabaya city.

In 2015, after the implementation of the proactive intervention, the frequencies of K1 ANC in Burneh PHC during 2015 were 881 (91.3), while the K4 visits were 601 (62.3%). The proactive intervention was decisive antenatal 4 times or more because many researchers revealed that antenatal visits under standard frequency have a higher perinatal mortality risk [10,14].

There were three forms of treatment-seeking behavior conducted by the Madurese community: the treatment of Kiai (religious leader), traditional birth attendants, and health professionals. The decision search for treatment depends on the degree of pain experienced by the patient. For childbirth, mothers are attended by midwives in collaboration with the traditional birth attendant [15].

It was found that the high dropout rate in the antenatal visits was due to the cultural influence of a society still strongly believe with traditional birth attendants and when doing antenatal in traditional birth attendants did not require a high cost [16]. There were still many pregnant women who do not follow the national health insurance program because of its difficult stewardship [17].

At the early detection of a high-risk pregnancy by health care providers during 2014 at Burneh PHC, data obtained 81.9%, while in 2015, data obtained 97.9 %. This indicated that there was an increase in detection due to the proactive intervention that provided refreshing material in the form of activities to raise awareness and

participation of health personnel in Burneh PHC on high-risk pregnancy so it can be detected much more quickly and accurately [18]. The high-risk cases had done by health providers at Burneh PHC showed a significant decrease, during 2014 obtained 52.5 % while in 2015 data obtained 32.4 %. This indicates that early detection could help the management of high-risk pregnancy cases earlier and better management so that obstetric complications can be decreased or even avoided.

From 920 pregnant women, there were 78.5% of them were delivered by health providers to Burneh PHC. Compared with its number in 2014, there were decreasing by about 14.6%. This decreasing number is caused by a decreasing number of high risk pregnancy, with increasing portion of high risk detection by a health provider in Burneh PHC [7].

After the implementation of the proactive intervention, by the year 2015, there was no maternal mortality in Burneh district. Whereas in 2014, there are 3 maternal mortality rates from 1054 women having birth. If we look at where the mother died, it turned out to be 80% that happened in the hospital. The cause can be concluded that there are "three late". First, delay in decision-making in the family or the availability of transport. A second late, during the journey to places such health clinic or hospital due to long-distance and the last, while in the hospitals, the medical team is not able to handle emergency cases because of the readiness of officers, medical devices and costs so that with the those "three late" may add to the morbidity and mortality of pregnant women[4,11].

Through proactive intervention, it is shown to improve the detection of high-risk pregnant mothers. This was in accordance with the government policy to seek new strategies in accelerating the reduction of maternal mortality.

These data showed that proactive intervention has an impact on various indicators on maternal health services, and finally it may contribute to decreasing maternal mortality. This study has a weakness that we use data obtained from cohort data from Burneh PHC. Students can only accompany after mother had antenatal

care in skilled health workers, for example in primary health care centers or midwives private practices, and they do not perform clinical action because they still have not permitted to do that.

Conclusion

Proactive intervention can improve the detection of high-risk pregnant women. It can be considered by government for making health policies in accelerating the reduction of maternal mortality rate.

Acknowledgment

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